

North Cascades National Park
Lake Chelan National Recreation Area
Ross Lake National Recreation Area

National Park Service
U.S. Department of the Interior



MOUNTAIN GOAT

Oreamnos americanus

CASCADES EXPLORER

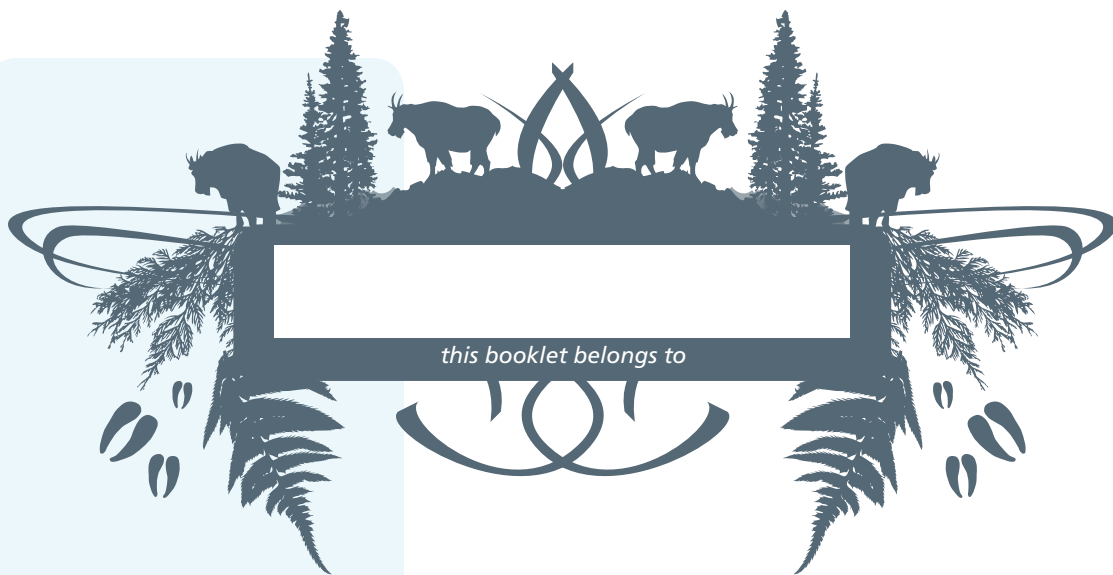
PROGRAM

AGES

12+

**PUBLIC LAND
STEWARDSHIP**





this booklet's theme:

PUBLIC LAND STEWARDSHIP

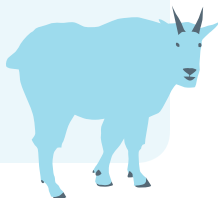
The National Park Service cares for special places saved by the American people so that all may experience our national heritage. National Parks are public lands that belong to all of us.

These places can mean something different for everyone – recreation, wilderness, living classrooms, laboratories for science and research, natural and cultural history, or career opportunities. You can learn about North Cascades National Park and help the National Park Service preserve and protect this unique place by becoming a Cascades Explorer!

If you could see one animal found in North Cascades National Park during your visit, which would it be?

Why did you choose this animal?

Where in the park might you find this animal?



Cascades Explorer Totem



How are YOU like a mountain goat?

What is a totem?

A totem is an animal, plant, or natural object that is meaningful to people living in the area where it can be found.

A totem can be an important cultural symbol for a group of people or an individual. Many indigenous people believe that each person has a totem from nature that acts as a spirit guide and protector for that person. Totem poles can be found throughout the Pacific Northwest with carvings of each tribe's totems.



HOW TO BECOME A CASCADES EXPLORER



Two different types of activities are found within this booklet. Some are specific to a region in the park complex while others you can do wherever you are visiting. To receive an official Cascades Explorer patch, badge and certificate, *please complete at least 1 PLACE-BASED ACTIVITY and 5 GENERAL ACTIVITIES.* *

CHOOSE 1

HOZOMEEN and ROSS LAKE	<input type="checkbox"/>	<input type="checkbox"/>
NEWHALEM and HIGHWAY 20	<input type="checkbox"/>	<input type="checkbox"/>
STEHEKIN and LAKE CHELAN	<input type="checkbox"/>	<input type="checkbox"/>

Note: You can choose from two activities in each place.

CHOOSE 5

Learn about the North Cascades	1	<input type="checkbox"/>
Save the Snags!	2	<input type="checkbox"/>
Sounds of the North Cascades	3	<input type="checkbox"/>
Who am I?	4	<input type="checkbox"/>
Return to Wildness	5	<input type="checkbox"/>
Wilderness and <i>Leave No Trace</i>	6	<input type="checkbox"/>
NPS Research Part I	7	<input type="checkbox"/>
NPS Research Part II	8	<input type="checkbox"/>
Field Notes	9	<input type="checkbox"/>
Climate Friendly Parks	10	<input type="checkbox"/>

We also have 3 other Junior Ranger booklets, each with their own theme and totem animal. Come back with your friends and family and try all our activities!



Total Activities Completed

ages 3 - 5

Pacific
Treefrog



**EXPLORATION OF THE
NATURAL WORLD**

ages 5 - 8

Black Bear



BIODIVERSITY

ages 8 - 11

Raven



**CULTURAL
AWARENESS**

ages 12+

Mountain
Goat

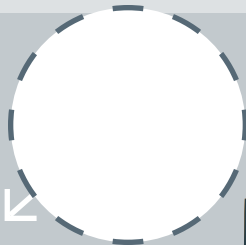


**PUBLIC LAND
STEWARDSHIP**



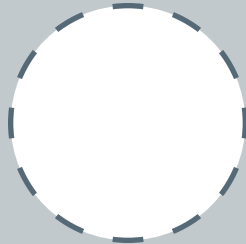
Where am I in North Cascades National Park?

North Cascades National Park Service Complex is a *complex* place. Three different areas are designated within the park complex: **Ross Lake** National Recreation Area, **Lake Chelan** National Recreation Area, and **North Cascades** National Park. The National Park Service manages each designated area differently. *Label the three areas of the park complex. Then circle the areas you have visited!*



**GLACIER PUBLIC
SERVICE CENTER**

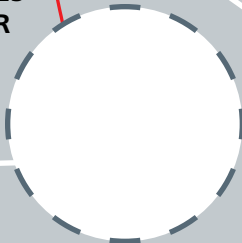
85 miles from
park boundary



**NORTH CASCADES
VISITOR CENTER**

NEUHALEM

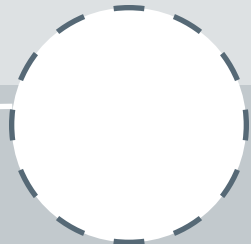
45 miles from
park boundary



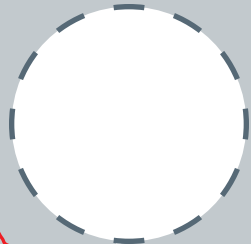
**HEADQUARTERS &
INFORMATION CENTER**
SEDO-WOOLLEY



**WILDERNESS
INFORMATION CENTER**
MARBLEMOUNT



HOZOMEEN



**GOLDEN WEST
VISITOR CENTER**
STEHEKIN





Complete this activity if you are visiting these locations : Newhalem and North Cascades Highway



Located in the Ross Lake National Recreation Area, Newhalem is a community on the edge of the wilderness in the upper Skagit Valley. Its rich cultural and natural history makes it a fascinating place to visit and a unique area to protect. Native American archeological sites have been found in the area and illustrate a long-standing and dynamic human relationship with the land.

The mighty Skagit River and the narrow gorge attracted businessmen, and in 1917 a hydroelectric project began just east of Newhalem. With no road in place, supplies and workers traveled instead by railroad from the downriver town of Rockport. Construction of the three dams concluded in 1952 with the completion of the 540-foot Ross Dam.

We all depend on electricity in our daily lives. The three dams in the Skagit River provide the residents of Seattle with approximately 20% of the power they use each day. Examine the photos on the left and notice how the landscape changed during the Diablo Dam construction.

Without these dams, how would the residents of Seattle get power?

List some of the things for which you need electricity.

What are some of the benefits of building a dam?

What are some drawbacks of building a dam?



What's in a Name?

The National Park Service strives to preserve and protect sites of historical significance. The archeologist and historian for North Cascades National Park have uncovered stories written across the landscape. Many of the place names are derived from the Native American language, Lushootseed, and tell the story of those who lived in this jagged terrain for thousands of years. Other places were named by those who arrived later, the explorers, mountaineers, miners, and homesteaders.



Choose at least two of the places listed below and write why you think it was given that name. If it is a Lushootseed name, go to the visitor center to find the translation.

Place Names

Definition or Meaning

NEWHALEM

DEVIL'S ELBOW

MISKAIWHU

SKAGIT

CHOPPING BLOCK

STETATTLE

SOURDOUGH MOUNTAIN

DESOLATION

TERROR

Write your name here.

What does your name mean? .



Complete this activity if you are visiting these locations : Hozomeen and Ross Lake

As the northernmost campground in North Cascades National Park, Hozomeen is just a short distance from the Canadian border. Here you can find visitors and staff from both the national park and British Columbia Parks. Since plants and animals don't observe political and park boundaries, think about how rangers must collaborate to protect this wild and special place. As you explore this area, notice features that are unique to the United States, British Columbia, or both.

Obelisk #72

Hozomeen
Mountain

Snag or
Nurse Log

Springboard
Scars on a
Trunk

BC Parks
Ranger

Chittenden
Bridge

The Game
Cabin


Plaque at
International
Point
Boat Launch

Raeburn
Mountain

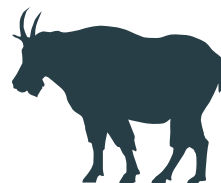
Border
Swath

NPS Ranger

Hozomeen
Lake

Explore the area 
and try to find as
many of Hozomeen's
historic, current, and
natural features as
possible.

Each time you find
something, put an **X**
in the square.





Choose two interest groups from the list below and take different positions on this issue. Write a few sentences to express your point of view. Remember, issues such as these rarely have simple solutions.

Electric company
People using electricity
Bull trout
Wolves
Campers
Kayakers
Wilderness Advocates
Biologists
Politicians

[illegible]

Ask a ranger: how has Hozomeen been affected by changes in land use and recreation?



Complete this activity if you are visiting these locations : Stehekin and Lake Chelan



Tucked away at the head of Lake Chelan and surrounded by mountains, no roads connect Stehekin to the outside world. Despite its remote location, people have been travelling through and living in the Stehekin Valley for thousands of years. Today, visitors enjoy experiencing the community of Stehekin and places such as the Buckner Orchard and the Golden West Visitor Center, where glimpses of the past can still be seen.

The Stehekin Valley is a very dynamic place that has continually changed over time. Some of these changes have been from natural processes, such as fires, floods, and glaciers, while others have been caused by humans. Some changes disappear quickly, and some are longer lasting.

Golden West Quest



Complete the 3 activities to learn how stories and changes from the past are all around us today.

HINT: You can find the answers at the Golden West Visitor Center or by asking a ranger.

#1 A HOTEL IN STEHEKIN The Golden West Lodge was a hotel that opened in 1927. It was built on high ground well above the lake after a dam was built in Chelan that raised the lake 21 feet. *Why do you think a dam was built on Lake Chelan?*

How did it change this place?

#2 LAKE CHELAN Even before the Dam was built, Lake Chelan was naturally a very deep lake. *How deep is Lake Chelan?*

Why do you think the lake is so deep? How was it formed?

#3 PAINTED ROCKS Native Indians lived seasonally in Stehekin as far back as 10,000 years ago. They came to hunt and fish or to carry mountain goat wool and other trading goods across the mountains. Native Indians painted pictures called "pictographs" on rocks along Lake Chelan. *Ask a ranger to show you a photo of the pictographs. What do you think the pictographs tell us about the past?*



DIRECTIONS: Buckner Orchard is about 3.5 miles up the Stehekin Valley Road. You can get to the orchard by walking along the old irrigation channel on a path labeled “Buckner Lane” (this begins just up-valley of the old school).

Take a Walk Down Buckner Lane

As you walk into Buckner Orchard, you’ll be following along the original irrigation ditch that continues to bring water to the apple trees today. Buckner Orchard is a special place that the National Park Service actively maintains and preserves so that people can experience a living piece of Stehekin’s history. *Once you’ve reached the Orchard, complete the following missions:*

MISSION #1 Explore the orchard to find each item listed below. Hint: Check the self-guided brochure available at the entrance of the orchard to help find the answers.
What types of apples are grown in this orchard?

Find the large concrete platform along the orchard road. What was it used for?

Search for the sundial that Harry Buckner built. What time does it say? (It may be an hour off because of daylight savings time.)

MISSION #2 Since Buckner Orchard is still maintained by the National Park Service as a historic working apple orchard, visitors are welcome to pick as many apples as they’d like. Humans aren’t the only visitors to the Orchard though. Take a close look at an apple tree and see if you can find any animal signs such as chew marks or broken branches. *Which animal do you think made these marks?*

MISSION #3 In addition to humans, many animals would like to eat the delicious apples at Buckner Orchard. In order to protect the apple trees and keep wild animals from becoming habituated to human food, park managers are always trying new ways, such as fences, to solve this problem.
If you were a park manager, what would you do to help preserve Buckner Orchard?

ACTIVITY

1

Learn about the North Cascades

Find out why North Cascades National Park is such a special place!

Attend a ranger program or interview a ranger.



#1 Attend a Program

Type of program:

If I were a ranger, something I would teach my friends and family about this special place:

#2 Interview a Ranger

What is your job at North Cascades?

How do you help protect this place for future generations?

12

Park Ranger signature: _____

Scientific research is conducted throughout North Cascades National Park to find evidence of animals like the Marbled Murrelet and the Spotted Owl that depend on established, mature forests for their survival.

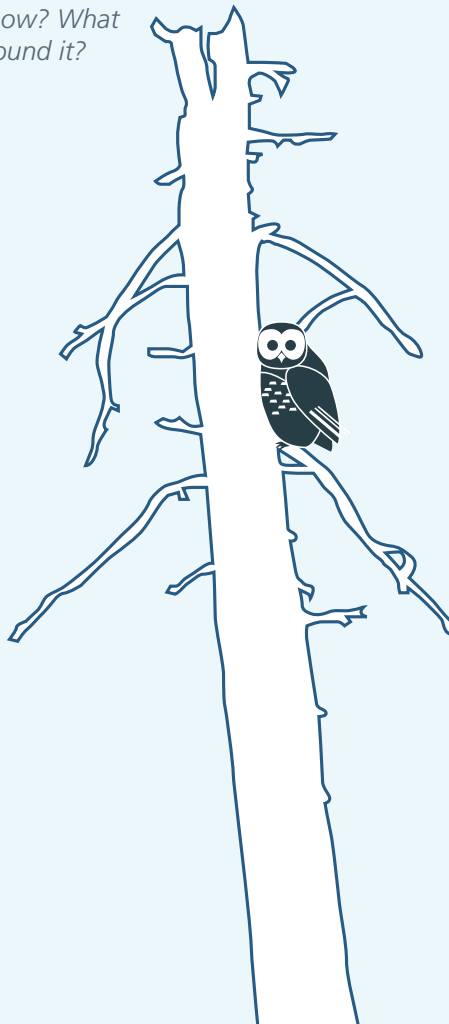
ACTIVITY

2

Save the Snags!



For this activity, find a snag and observe it for a few minutes. How many holes can you find? Who could have created these holes and who might live there now? What plants and animals do you see living on and around it? Draw your observations on the snag below.



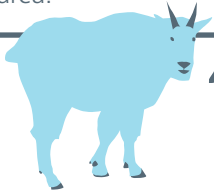
A **snag** is a dead tree that is still standing. Snags are an important element of an old-growth forest and provide food and shelter for many different plants, animals, and insects.

ACTIVITY

3

Sounds of the North Cascades

Just as a landscape is all the scenery you can see in a single view, a **soundscape** refers to all the sounds that can be heard in an area.



The *National Park Service Organic Act* mandates the preservation of natural resources within parks, including the acoustical environment (sounds). In order to understand the soundscapes of North Cascades, researchers are using recording equipment to compile a list of all the sounds that can be heard in the park.

For this activity, you will create your own sound map to record the sounds you hear in North Cascades National Park. Choose a place to sit and listen for at least 5 minutes. The "X" in the center is where you are sitting. Each time you hear a sound, draw a symbol on your map. For example, you might draw wavy lines to represent the sound of moving water or a musical note for birdsong.



X

Water can be heard throughout North Cascades National Park. Can you think of another sound that can be heard in all parts of the park? Is this sound natural or human-made?

A carnivore is an animal that eats meat. Little is known about the presence, distribution and relative abundance of forest carnivore populations in North Cascades National Park. Concerns over populations of American marten (*Martes americana*), fisher (*Martes pennanti*), wolverine (*Gulo gulo*) and lynx (*Lynx canadensis*) have prompted the need to better understand their status and where they live in the park.

ACTIVITY

4

Who Am I?

* For this activity, read the descriptions below of four forest carnivores and match each description with either: **Marten**, **Fisher**, **Wolverine**, or **Lynx**.



Pine Marten

I depend on large trees to survive. I was hunted close to extinction by trappers and may no longer be found in the North Cascades. I am a skilled hunter and can even take down a small porcupine. I generally eat small rodents, rabbits, grouse, and other small animals.

I AM A: _____

I live in the most remote corners of North Cascades National Park and have thus become a symbol of wilderness. I can cover many miles in a short period of time, even across land that is covered by snow. I eat small mammals and the remains of dead animals. I have a very powerful set of jaws, which I use to eat frozen meat in the winter.

I AM A: _____

I am at home in the forest, where I can move with speed and ease on the forest floor or among branches and tree trunks. I use my keen sense of smell to find voles, bird eggs and nestlings, squirrels, insects, and dead animals. I need mature forests to survive.

I AM A: _____

I am listed as threatened in the lower 48 states. I try to avoid areas with people as I am very shy. I am found in remote areas of the North Cascades and am able to survive harsh winters with deep snow and extremely cold temperatures. The population of my species rises and falls in response to snowshoe hare populations, as hare are an important part of my diet.

I AM A: _____

Photo taken with a motion activated remote camera.

North Cascades National Park is home to many wild creatures. The wolverine is truly a wilderness creature as it prefers areas devoid of human sounds and with little evidence of human activity. Biologists study wolverines in the park to learn about the state of the wilderness and its inhabitants.

ACTIVITY

5

Return to Wildness

The official definition of **Wilderness**, as stated in the **Wilderness Act** of 1964 is an area that is “untrammeled by man...”. Untrammeled means that nature is unhindered or uninhabited by man. **Wilderness** is a place where “humans are visitors”.



During your visit to North Cascades National Park, have you found areas that meet the needs of the wolverine as described above?

What other animals living in this park depend on wilderness for their survival?

Describe wilderness in your own words.

How much of North Cascades National Park is designated Wilderness?

Each Wilderness Area has a name. What is the name of the Wilderness area in North Cascades? Hint: ask a ranger.

The wilderness can be a beautiful but fragile place, especially in areas of high visitor use. When travelling in wild places each of us can minimize our impact and help keep the landscape pristine. Following Leave No Trace principles is one way we can be good stewards of public lands.

ACTIVITY

6

Leave No Trace 101



Being prepared is the first step to having a safe trip with minimal impact. For the first part of this activity, pretend that you are planning a three-day trip into the backcountry. Create a list of essential items to bring on your journey.

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____



Now that you are ready for your journey, read the three examples below of common situations that can arise during a wilderness trip. For each of the scenarios, write what you would do if you were in that situation. Remember to leave as little impact as possible.

1

You are camping in the backcountry with your family. While getting ready for a day hike, you notice a black bear nearby. What would you do to make sure your camp will not attract the bear while you are away?

2

You are out for a hike and come across some garbage left by other visitors. What is the proper way to handle waste in the backcountry?

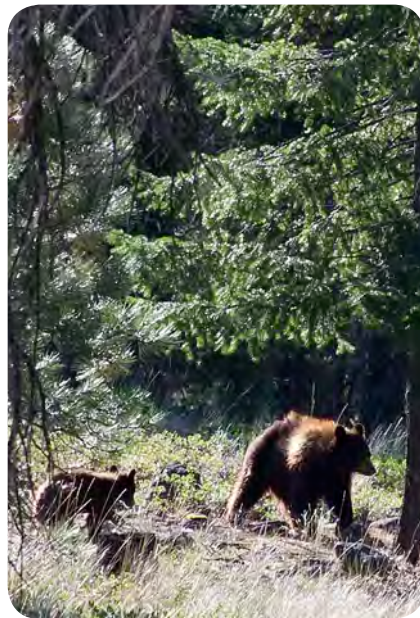
3

You and your family are spending the night at a site with a metal fire grate and decide to have a campfire. What should you do to minimize your impact while enjoying a campfire?

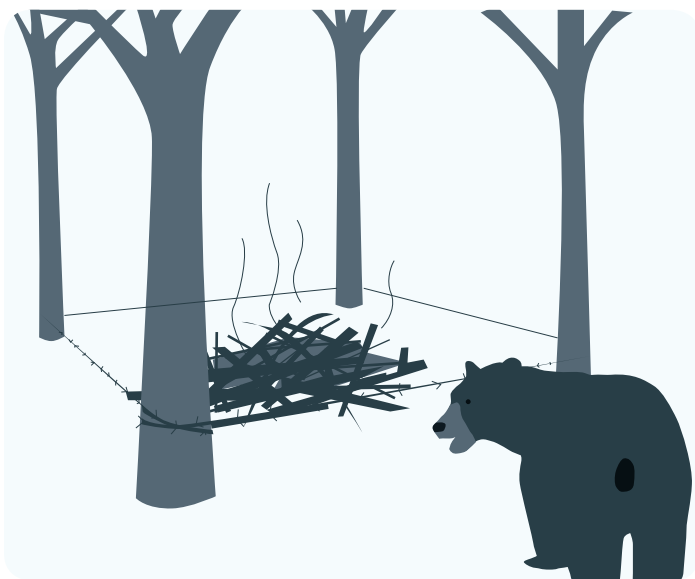
The CASCADES CARNIVORE CONNECTIVITY Project

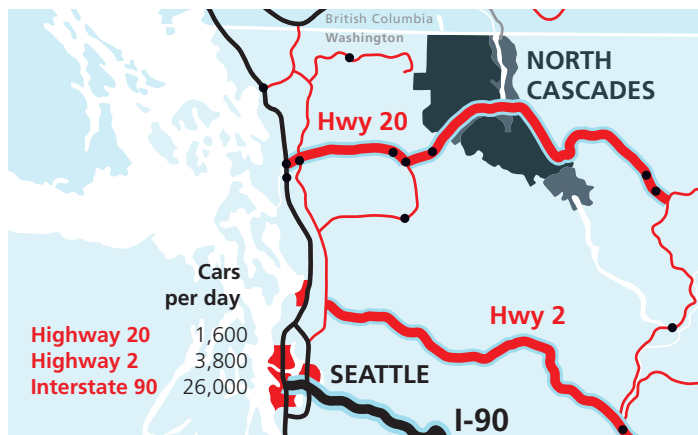
Project description: From the perspective of wildlife, national park borders don't exist. They can cross these invisible lines without seeing any difference. Instead, asphalt roads and cars are much more noticeable. Across the North Cascades ecosystem, three major highways bisect the mountains. National Park Service scientists, in collaboration with other researchers, are studying the effects of these highways on carnivore populations, specifically, black bears (*Ursus americanus*) and martens (*Martes americana*).

These researchers can identify specific animals by capturing tufts of hair and thus their genetic material. In order to get this hair, scientists create a scent lure (made from cattle blood, fish fertilizer, and fish oil). They pour this liquid over a debris pile and enclose the area with barbed wire. Bears, which are attracted by the smell, crawl under the wire and their fur is harmlessly caught in the wire. Researchers later return to the site and retrieve the hair for genetic analysis.



Why do researchers use hair snags instead of trapping live animals?





Why do you think I-90 has more vehicles per day than the other highways?

Animals populations are stronger when there is genetic diversity, meaning that there is a large population of potential mates. If highways prevent wildlife from crossing from one side to the other, populations become divided and genetic diversity is decreased. One solution to this problem is to create bridges covered in natural vegetation. These "land bridges" allow animals to safely cross above traffic.



How else might humans help animals cross barriers like highways?

ACTIVITY

9

Field Notes



It can be fun to keep a field journal to record observations with notes and small sketches.



*For this activity, take some time to observe the natural phenomena of North Cascades National Park. Choose **two different locations** and record your findings from each place in the journal below. For example, you could choose a covered forest canopy and a stream bank.*

Field Sketches:

Name:

Date:

Season:

Location:

Habitat Type:

Weather:

Plants:

Wildlife Sightings:

Other Observations:

NEW WORD! Phenology is the study of the timing of natural phenomena—observable occurrences—and events. It could be the return of migratory birds and butterflies or the flowering of plants in the spring.

Name:

Date:

Season:

Location:

Habitat Type:

Weather:

Plants:

Wildlife Sightings:

Other Observations:



Field Sketches:

Decisions we make everyday impact the environment. At North Cascades National Park, we constantly strive to be better stewards of the environment. From composting, recycling, and carpooling, to the scientific research we conduct for our resource management decisions, we try to find ways to reduce our carbon footprint.

You can be a steward of the environment, too! Start thinking about where you find the things you need to survive. People rely on different sources of food, water, and shelter, depending on where they live. Remember, shelter could include a house, clothing, even sunscreen.

ACTIVITY

10

Climate Friendly Parks



* In the columns below, list at least one example of each and write where it comes from. Circle the items from your list that come from your local community or region. Underline the items that have to travel the farthest to get to your house.

WATER	FOOD	SHELTER (house, clothing)
Ex: <u>Well water</u> from backyard	Ex: Bananas from Guatemala	Ex: <u>Sweater</u> , made in China

From the list above, is there a way to find your underlined item from a source closer to home? Maybe you could find a similar local product that would serve the same purpose.

One person can make a difference. You have invested a lot of time learning about North Cascades National Park and applying some of that information to your own life. *Now take some time to think about what you can do to get involved and help national parks, as well as the natural places in and around your own community. In the space provided below, create your own pledge which includes a minimum of five ways you can help. Circle two of the five that you would be willing to incorporate into your daily life.*

AS AN OFFICIAL CASCADES EXPLORER I PLEDGE TO:



Cascades Explorer

Date

Park Ranger

Date





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Developed by the National Park Service, with support from British Columbia Parks and the United States Forest Service.

